

CHAPTER VII

M&O CONTRACTOR PRACTICES AND PROCEDURES

1. **INTRODUCTION:** This section reiterates the policies promulgated in DOE Order 130.1 for the M&O Contractor Handbook with respect to the need to provide good budget justification, documentation, and to provide the Department of Energy with a budget document that has been reviewed for accuracy and reasonableness by someone other than the program advocate. This section describes how the M&O Contractor carries out roles and responsibilities with respect to the preparation and review of budget estimates by the Central Budget Office Staff, Project/Program Managers, and Senior Management to ensure proper reviews have been conducted.
2. **BUDGET JUSTIFICATION REQUIREMENTS:** A section on budget justification that describes the minimum kinds of information necessary for all budget requests whether Field Work Proposals (FWPs), EM Activity Data Sheets (ADSs), or other documents are used to justify budget requests. These documents should contain the following types of information:
 - a. The overall objectives of the program and specific PSO guidance.
 - b. Discrete milestones and associated funding.
 - c. The accomplishments planned for the current year and the scope of the work planned for the budget year. The scope should clearly describe what will be done with the requested funds in the budget year and how the work will be accomplished.
 - d. The need for the proposed level of effort. (While a continuing activity normally requires less justification than a new activity, there is still a need to justify ongoing activities.)
 - e. The basis for the estimates including the key assumptions that drive the resource requirements.
 - f. If different funding levels are requested, clearly describe what will be bought for the additional funds above the target or guidance level and the justification for the increases.
 - g. If capital equipment is requested, identify all large items of equipment, specifying whether or not the equipment is for replacement and why it is required.

- h. If construction projects are required, indicate in the operating expense portion of the justification the importance of the facility to the program objectives, focussing on the timing of the facility requirement.
 - i. If it is being proposed that a structure or facility be funded out of operating expenses, indicate the reasons for not using construction funds.
3. **BACKUP DOCUMENTATION REQUIREMENTS:** This section should contain the documentation requirements and actual examples of good documentation for various categories of budget requests ranging from those where minimum documentation is required, such as for ongoing basic research, to those where extensive documentation is required, such as for new initiatives, changing programs, or applied research, and developmental activities. Preferably, the backup documentation should be developed using an automated system that is easily updated as changes occur throughout the budget cycle and perhaps even feeds directly into the estimates on the FWP, ADSs, etc. The result is the project manager is required to plan in more detail the purpose for which the funds are being requested. This then provides the reviewer with information upon which to judge the reasonableness of the request. It is important that this documentation be developed so that it is useful to the project manager in managing and planning the project.
4. **BUDGET FORMULATION SYSTEM:** This section of the handbook should provide resource managers, project managers, and budget validators with a document that tells them what is in the numbers included in the estimates, where they were derived, and some summary information on the financial information system.
- a. Describe summarily how the financial information system works to apply labor rates, indirect, other indirect allocations, recharges, materials and supplies, equipment and construction, etc. to the estimates to be included in the FWP, ADSs, and other documents used to justify budget requests.
 - b. Include in this description how indirect rates and recharge rates are developed, applied, and what they include.
 - c. One suggested way to accomplish this might be to fill out an FWP or ADS and describe step-by-step where the financial information is derived from and what it contains, such as:
 - (1) staffing:
 - (a) Average salary for the Chemistry Department for type of FTE, such as scientist, engineer, technical support, clerical, etc.
 - (b) Fringe benefits - list what these are.

- (c) Recharge costs by type - list what they are.
- (d) Materials and supplies - list what they are.
- (e) Indirect charges - list what they include.
- d. After documenting what the estimates contain, describe how the process works to ensure that the proper rates are entered into the system (i.e., pooling distribution system, etc.). Describe the pools and how they are applied to the estimates.
- e. Provide flow charts or other visual displays to assist in explaining how the financial information system works.

5. **COST ESTIMATING TECHNIQUES:**

- a. All cost estimates should be based upon sound principles and quantitative estimates, and should be fully documented. The documentation is to show clearly and concisely the rationale behind the estimates, the origin of the quantitative elements used in producing the estimation rates, and the final rates used in the budget formulation process.
- b. The cost estimation process must begin with a clear and complete knowledge of the work to be performed/accomplished. For work with definable milestones and end-products, the cost estimates should be very detailed and precise. Work classified as basic research, where there is no identifiable end-product or “deliverable” does not allow for very detailed estimates, but the scientists should produce estimates detailed to the lowest level possible.
- c. For every category of work to be performed, cost estimates must be produced for both total dollar values and FTEs (labor-full-time-equivalents) required to get the job done. Estimates of necessary resources can be formulated on the scope of work to be performed and the schedules detailing the work to be performed (e.g., Field Work Proposals) and should include such items as:
 - (1) Staffing
 - (2) Salary and Fringe
 - (3) Indirect (burden)
 - (4) Materials and Services
 - (5) Major Procurement
 - (6) Integrated Contractor Cost
 - (7) Central Services (ADP, Engineering and Inspection, etc.)
- d. Estimates should be compiled on the same basis as the costs are collected.

e. The following is a list of various cost estimating techniques that should be used as appropriate:

- (1) **Bottoms Up:** Generally, a work statement and set of drawings or specifications are used to “takeoff” material quantities required to perform each discrete task performed in accomplishing a given operation or producing an equipment component. From these quantities, direct labor, equipment, and indirect costs are derived and added thereto.
- (2) **Specific Analogy:** Specific analogies depend upon the known cost of an item used in prior systems as the basis for the cost of a similar item in a new system. Adjustments are made to known costs to account for differences in relative complexities of performance, design, and operational characteristics.
- (3) **Parametric:** Parametric estimating requires historical data bases on similar systems or subsystems. Statistical analysis is performed on the data to find correlations between cost drivers and other system parameters, such as design or performance parameters. The analysis produces cost equations or cost estimating relationships that can be used individually or grouped into more complex models.
- (4) **Cost Review and Update:** An estimate is constructed by examining previous estimates of the same program/project for internal logic, completeness of the scope, assumptions, and estimating methodology. The estimates are then updated to reflect the cost impact of new conditions or estimating approaches.
- (5) **Trend Analysis:** A contractor efficiency index is derived by comparing originally projected contract cost against actual costs on work to be performed to date. The index is used to adjust the cost of work not yet completed.
- (6) **Expert Opinion:** May be used when other techniques or data are unavailable. Several specialists can be consulted until a consensus cost estimate is established.